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August 6, 1986

Marvin Durning, Esquire
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Subject: Data Review and Deficiencies Analysis
Old Inland Pit - Letter Report Number 2

Dear Mr. Durning:

This report summarizes the Data Review and Deficiency Analysis performed on the data presented by EPA and various other sources, as well as the additional Data Collection Program and results.

REVIEW OF EPA DATA

The apparent basis for EPA's proposal to list the Old Inland Pit on the NPL is information gleaned from interviews, reports, and files by Ecology and Environment, Inc. (E&E) who were the EPA's FIT contractor. Based on information submitted by E&E, the entire field inspection consisted of a period of less than three hours. During this inspection, the personnel for Spokane Steel Foundry were interviewed and a site inspection was made. The Old Inland Pit was visited and two soil samples were taken (designated SS1 and SS2). As we have discussed, it was perhaps inevitable that the data collected was inadequate and that substantial errors occurred when so little time was devoted to the site inspection. For whatever reason, however, the data on which EPA's nomination of the Old Inland Pit was based was seriously deficient, inaccurate, and not interpreted sufficiently in context.

In a similar vein, no rationale has been prepared by E&E to explain what it is that justified their concerns at the Old Inland Pit. Armed with only the knowledge available from conversations with the Spokane Steel Foundry, the DOE and Spokane County Health District, and limited available data on the bag-house dust, which indicated that the dust was not a RCRA characteristic hazardous waste (DOE EP toxicity data), E&E proceeded to develop a HRS score, making important mistakes in this process also.

g site designated hazardous waste

ADDITIONAL DATA COLLECTION

Due to the inherent problems from boulders and construction debris in the fill, it was infeasible in the available time to conduct drilling at the site to collect soil samples. Therefore, sampling of the near surface and subsurface materials was performed with a backhoe, as can be seen in the accompanying photos.

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The samples I took at the Old Inland Pit are designated RSS1 through RSS13 and their locations are shown on the photos (please note that these photos were printed from color slides, and during this process the colors have been made more green and darker than the originals - it would appear to me that your photos more accurately present the true colors at the site).

Rationale for my soil samples locations was as follows:

- o Double-check E&E results by returning to their sampling locations as described in the Feb. 22, 1985 Preliminary Site Investigation Report.
- o Determine representative levels in the backfill for the hazardous substances analyzed by E&E and compare with SS1 and SS2.
- o Determine background levels of the hazardous substances analyzed by E&E by sampling undisturbed native soil.
- o Determine the subsurface concentrations of hazardous substances located below the backfilled materials to determine if leaching of any of these substances has occurred into the subsurface materials.

The specifics of the sampling rationale are as follows (see Figures 1 and 2):

Background (Undisturbed native soil) (Photos 1 to 3)

Surface - RSS2 - 2" below grade in undisturbed soil at southwest corner of site. *-near Kallons 5th St*

Subsurface- RSS1 - At pit bottom grade, six feet into undisturbed bank.

Surface of pit bottom in unfilled areas (no backfill), (Photos 4 to 10)

RSS6 - Sample collected for analysis
RSS8 - of organics to determine background
RSS9 - organic levels.
RSS12 -
RSS13 -

SS1 Location - Pit bottom in backfill and below it (Photo 11)

RSS4 - 2" below grade at or near coordinates described by E&E in Feb. 22, 1985 report.

RSS5 - Same location as RSS4, 3 feet below grade - sample taken below any visible backfilled material.

SS2 Location

(Photo 12)

*This does not
show the same
E&E as*

RSS3 - Near surface sample
ordinates described by E&E in
report.

RSS7 - Same location as RSS3,
grade - sample taken below any
material.

Black Dust - Baghouse Dust Backfill (Photo 13)

RSS11 - Near surface sample in f.
grade in black dust.

RSS10 - Same location as RSS11, 1
grade in black dust.

All samples collected during this evaluation were collected in chem
glassware supplied by Laucks Laboratory in Seattle, Washington.
collected in a one pint jar for BNA and metals, and two 40 ml VOA
EPA 8010 and 8020 analyses. All samples were carefully collected i
with EPA and REED Corporation standard protocol. New vinyl glo
utilized and all sampling equipment was washed with isopropyl alco
thoroughly air dried between samples. All samples were delivered i
under my direct supervision.

Table 1 presents a summary of the EP toxicity information prepared
DOE in 1983 on Spokane Foundry's baghouse dust. As can be seen,
concentration of heavy metals in the EP toxicity extract is either less th
current Safe Drinking Water Act Maximum Contaminant Level (MCL) or
close to it - even the extract is of almost drinkable quality with respec
heavy metals.

Two soil samples were collected by E&E at the Old Inland Pit in August.
No rationale was presented for sample location selection or the selection
analyses. Tables 2 and 3 summarize the data collected by E&E and by m
the pit. Site and sampling locations are shown on Figures 1 and 2. Tab
shows that the data at E&E's SS1 and SS2 are replicated well by the dat
collected on July 16, 1986 by me with respect to heavy metals. Table 3 sh
that the background data for the concentration of the inorganics is both fai
uniform and low. Unfortunately, Dr. Hartz was not able to identify any ex
ting data on soil chemical constituent information, within the allowable respoi
period of these comments.

Interestingly, the average arsenic levels of 22 ppm found in the undisturbed
background samples (RSS1 and RSS2) is greater than the average of 9.3 ppm
measured in SS2, RSS4, RSS5, RSS11, RSS10 - samples believed to contain
baghouse dust.

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Tables 4 and 5 present the concentrations of a variety of organics apparently detected in the E&E samples, which were also analyzed by Laucks Laboratory. As can be seen, with the exception of acetone and methylene chloride, most of the compounds are at or below detection limits, which indicates the presence of little, if any, organic materials.

With respect to acetone and methylene chloride, the results shown may be anomalies. In a note from Laucks Laboratory, they acknowledge that the levels of methylene chloride and acetone are likely due to laboratory contamination and not to soil contamination.

To accelerate processing time, these samples were analyzed by gaschromatograph rather than GC/MS. The GC/MS would have confirmed or denied the acetone determination rather than just reporting a peak on the GC which came out when acetone should have come out. Thus, the GC can be fooled by other compounds with similar behavior to acetone. Any organic compound which traveled through GC at the same rate would be categorized as acetone. It is likely that the reported concentrations are most likely a mimic or are the results of natural biochemical decomposition in the soils. The uniformity of the acetone data makes the results highly suspect.

Table 6 presents the background data for volatiles at other locations in the pit. As can be seen, these data are uniformly low.

Tables 7 and 8 present the detection levels reported by Laucks Laboratory for the analyses they performed, and the laboratory result sheets are appended. Due to a clerical error, no analyses were completed for barium or 2-methylnaphthalene, and no time was available to correct this error.

SUMMARY

The data presented above demonstrate the following:

- o The arsenic level in the baghouse dust is not significantly different from background levels for native soils in the Old Inland Pit.
- o Other inorganics in the pit are at or near the background levels found in native soils.
- o The soil samples taken by Ecology & Environment are uniformly low in hazardous substance concentration, and they appear to be representative with respect to heavy metals.
- o The organic hazardous substances are for the most part non-existent (below detection) in my samples.
- o The data appears to be erroneous with respect to methylene chloride and acetone, for the reasons presented.

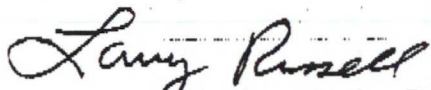
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- o No significant quantities or concentrations of hazardous substances, as defined by being significantly above background levels, were found.

If you have any questions, please call. I am looking forward to meeting with you to discuss these matters.

Sincerely,

RUSSELL ENVIRONMENTAL ENGINEERING
AND DEVELOPMENT (REED) CORPORATION



Larry Russell, Ph.D., P.E.

Attachments